

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Previously Amended) A computer-readable storage medium for storing a shadow volume generation program that causes a computer to generate a shadow volume used for rendering a shadow cast by an object placed in a three-dimensional virtual space, wherein the shadow volume generation program causes the computer to execute the steps of:

writing a Z value corresponding to each pixel within a predetermined area including at least the shadow casting object, into a Z-buffer, using a light source placed in the virtual space as a viewpoint; and

generating the shadow volume from a plane object by determining a position of each vertex of a plurality of polygons composing the plane object, with regard to a direction perpendicular to a surface of the plane object in accordance with the Z value of each pixel written in the Z-buffer, the Z value of each pixel written in the Z-buffer being unchanged during shadow volume generation.

2. (Original) A storage medium according to claim 1, wherein

a shape of the plane object is defined by a plurality of vertices, each having different combination of an X-coordinate and a Z-coordinate, and

in the shadow volume generation step, a Y-coordinate of each vertex of the plane object is determined in accordance with the Z value of each pixel written in the Z-buffer.

3. (Original) The storage medium according to claim 1, wherein

the light source is a point light source, and

the shadow volume generation step includes a step of determining a position of each vertex of the plane object with regard to a direction parallel to a surface thereof in accordance with the Z value of each pixel written in the Z-buffer.

4. (Original) The storage medium according to claim 3, wherein

a shape of the plane object is defined by a plurality of vertices, each having a different combination of an X-coordinate and a Z-coordinate, and

in the shadow volume generation step, the X-coordinate and the Z-coordinate of each vertex of the plane object are determined in accordance with the Z value of each pixel written in the Z buffer.

5. (Previously Amended) The storage medium according to claim 1, wherein the shadow volume generation program further causes the computer to execute the steps of:

placing the shadow volume generated at the shadow volume generation step in the virtual space in a virtual manner so that a height direction of the shadow volume coincides with a direction of light emitted from the light source, and

rendering the shadow of the shadow casting object using the shadow volume placed in the virtual manner.

6. (Previously Amended) A game device for generating a shadow volume used for rendering a shadow cast by an object placed in a three-dimensional virtual space, comprising:

a Z-buffer;

a programmed logic circuit for writing a Z value of each pixel within a predetermined area including at least the shadow casting object, into the Z-buffer, using a light source placed in the virtual space as a viewpoint; and

a programmed logic circuit for generating the shadow volume from a plane object by determining a position of each vertex of a plurality of polygons composing the plane object, with regard to a direction perpendicular to a surface of the plane object in accordance with the Z value of each pixel written in the Z-buffer by the programmed logic circuit for writing the Z value, the Z value of each pixel written in the Z-buffer being unchanged during shadow volume generation.

7. (Previously Amended) A shadow volume generation method for generating a shadow volume used for rendering a shadow cast by an object placed in a three-dimensional virtual place, comprising the steps of:

writing a Z value of each pixel within a predetermined area including at least the shadow casting object, into a Z-buffer, using a light source placed in the virtual space as a viewpoint; and

generating the shadow volume from a plane object by determining a position of each vertex of a plurality of polygons composing the plane object with regard to a direction perpendicular to a surface of the plane object in accordance with the Z value of each pixel written in the Z-buffer, the Z value of each pixel written in the Z-buffer being unchanged during shadow volume generation.

8. (New) A storage medium according to claim 1, wherein generation of the shadow volume from the plane object by determining the position of each vertex of the plurality of polygons composing the plane object, with regard to the direction perpendicular to the surface of

the plane object in accordance with the Z value of each pixel written in the Z-buffer, the Z value of each pixel written in the Z-buffer being unchanged during shadow volume generation, reduces exception case handling.

9. (New) A game device according to claim 6, wherein the programmed logic circuit is configured to generate the shadow volume from the plane object by determining the position of each vertex of the plurality of polygons composing the plane object, with regard to the direction perpendicular to the surface of the plane object in accordance with the Z value of each pixel written in the Z-buffer, the Z value of each pixel written in the Z-buffer being unchanged during shadow volume generation, to reduce exception case handling.

10. (New) A shadow volume generation method according to claim 7, wherein generation of the shadow volume from the plane object by determining the position of each vertex of the plurality of polygons composing the plane object, with regard to the direction perpendicular to the surface of the plane object in accordance with the Z value of each pixel written in the Z-buffer, the Z value of each pixel written in the Z-buffer being unchanged during shadow volume generation, reduces exception case handling.